Operative Techniques in Thoracic and Cardiovascular Surgery

Volume 17, Number 4 Winter 2012

Introduction

Surgical Approach to Obstructive Cardiomyopathy: Conventional vs. Robotic

Two noted authors present their approaches to septal myectomy for hypertrophic obstructive cardiomyopathy. Dr. Schaff describes transaortic extended septal myectomy as standard treatment for symptomatic patients with obstructive hypertrophic cardiomyopathy (HCM). He describes a definite learning curve to allow the avoidance of major technical complications including heart block, ventricular septal defect, and injury to the aortic or mitral valves, or a combination of the above. He describes the evolution of the Mayo technique and how it differs from the classic Morrow myectomy. A detailed description of the surgical approach is presented. In experienced hands, muscle excision in the immediate subaortic area improves the distal extent of possible resection, which sometimes extends as much as 7 cm below the aortic valve. The authors describe their experience in over 2000 patients undergoing septal myectomy for HCM. Their results are outstanding and serve as a standard for cardiac surgeons embarking on this procedure.

Dr. Chitwood presents an elegant description of a robotic transatrial and transmitral approach to myectomy for HCM. This technique was first described in 2002 by Vanermen and Casselman via a left atrial approach using a right mini-thoracotomy. Dr. Chitwood extends this approach by using the daVinci robot system. He describes generous septal resection combined with papillary muscle release and repositioning. The technique for this procedure, including the robotic setup, instrument arm placement, and exposure, is outlined well. The anterior mitral leaflet is incised at its base to allow access to the hypertrophied septum. Following myectomy and papillary muscle release, the anterior leaflet is repaired and the valve is reinforced with a posterior annuloplasty band, completing the procedure.

Both of these techniques focus on the relief of the underlying problem of HCM and depict alternative anatomic approaches, either of which can be successful in experienced hands.

Recurrent Aortic Arch Obstruction

Excellent results for repair of aortic arch obstruction have been achieved in the majority of centers in the current era; however, recurrent obstruction is a potential problem and the treatment options can be controversial in regard to the best approach, particularly when the obstructed segment is long and/or involves arch vessels. Recurrent arch obstruction poses certain unique structural and physiologic challenges to the surgeon. Some centers use extra-anatomic aortic bypass techniques to avoid dissection on the previously operated field. Other centers advocate techniques that rely on anatomic reconstruction. In this issue, Dr. Dearani and associates present their technique for extra-anatomic bypass grafting. Extra-anatomic bypass graft from the ascending to the descending thoracic aorta represents a valuable option for these difficult patients that avoids direct reintervention on the aortic arch or isthmus and can achieve excellent results with no residual gradient and minimal morbidity. Also in this issue, Drs. Mery and Fraser illustrate their techniques for anatomic repair. This technique also allows for complete relief of obstruction and concomitant repair of intracardiac anomalies and limits the use of conduits in growing children. The surgical strategies described by these experts have the potential to improve outcomes for these complex patients.

Minimally Invasive Chest Wall and Mediastinal Procedures

In this issue of *Operative Techniques in Thoracic and Cardiovascular Surgery*, the topics involve minimally invasive chest wall resections, ligation of the thoracic duct, and diaphragm plication. As video-assisted thoracoscopic surgery (VATS) procedures have increased over the years, there is an increasing appreciation that many operations previously performed via an open approach can now be done just as well with minimal invasiveness. In the first article, Dr. Onaitis and colleagues from Duke University report on their technique for performing a VATS lobectomy with en bloc chest wall resection. Although this may be considered to be an advanced VATS procedure, the concepts are actually quite simple and oncologically sound. The next article by Dr. Allan Pickens from Emory University describes their approach to VATS ligation of the thoracic duct. It is well illustrated and thoughtfully described. Finally, Dr. Shanda Blackmon from Methodist Hospital describes the VATS approach to diaphragm plication. This is a procedure that, when done via a VATS approach, results in significantly less pain and morbidity for these patients. Collectively, these articles provide the reader with important technical tips and approaches for managing these disease processes with minimally invasive approaches.

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http://dx.doi.org/10.1053/j.optechstcvs.2013.01.001